



Lightning Tracking Tool for Assessment of Total Cloud Lightning within AWIPS II

Jason E. Burks

NASA Marshall Space Flight Center / Earth Science Office, Huntsville, Alabama

Geoffrey T. Stano

ENSCO, Inc. / NASA Short-term Prediction Research and Transition (SPoRT) Center, Huntsville,
Alabama

Ken Sperow

CIRA / NOAA Office of Science and Technology / Meteorological Development Laboratory, Silver
Spring, Maryland

26th Conference on Weather Analysis and Forecasting / 22nd Conference on Numerical Weather
Prediction

94th AMS Annual Meeting (2014) in Atlanta, GA

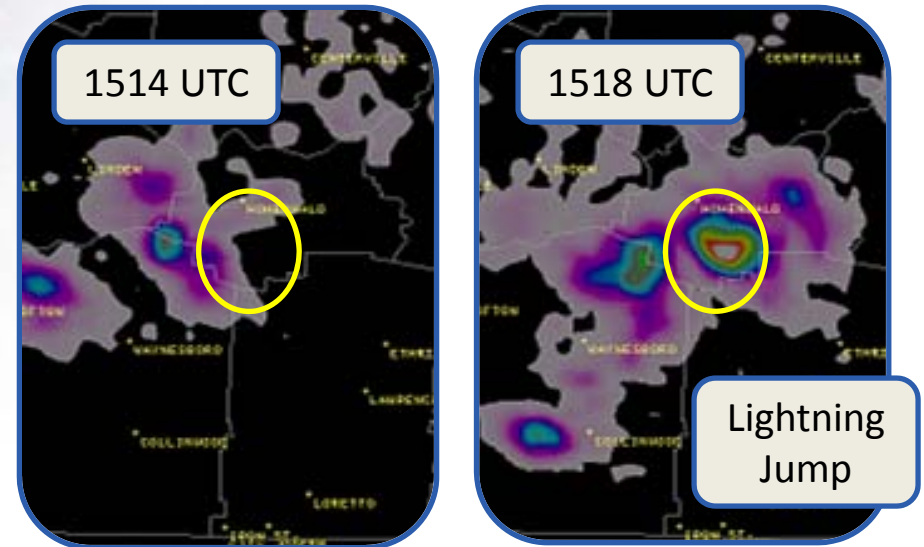
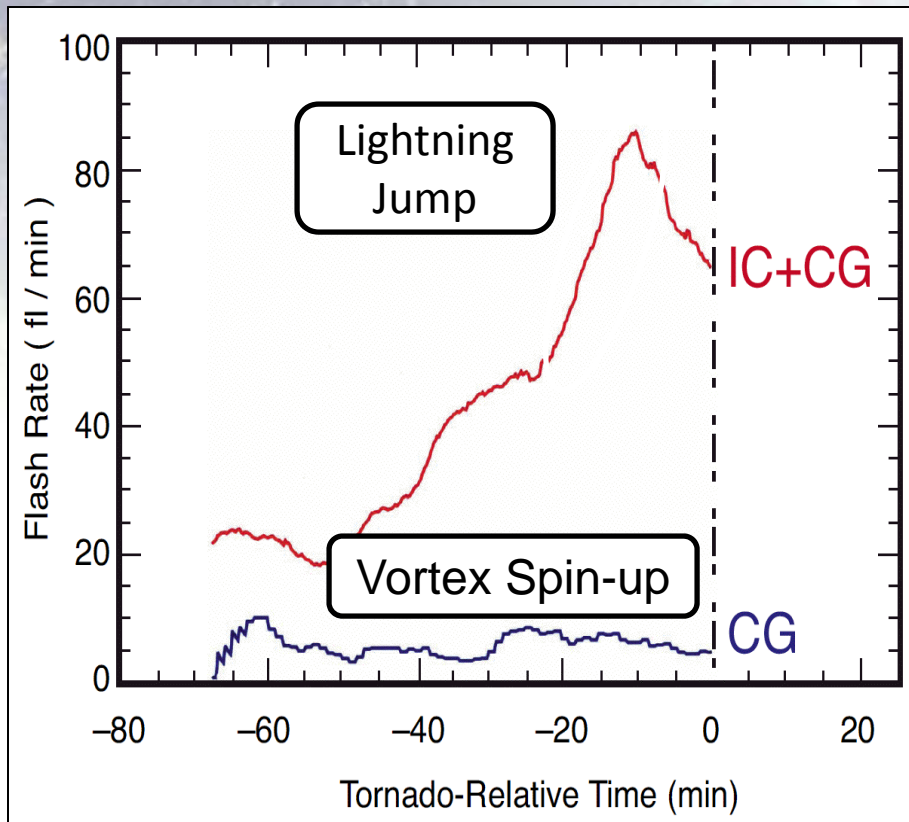
Session: "New Tools for Decision Support Services"



Transitioning unique data and research technologies to operations



Introduction to Lightning Jump



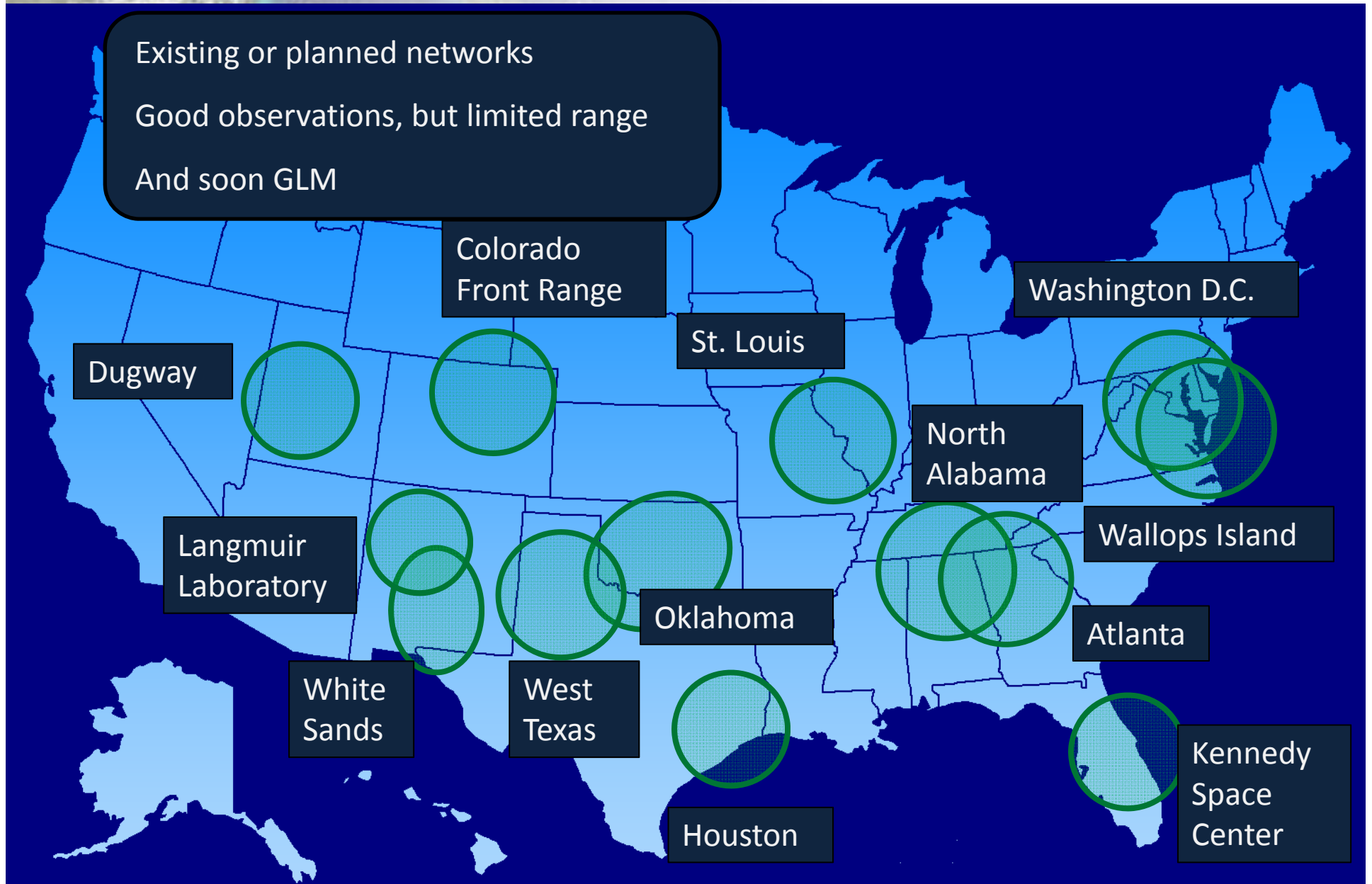
- Related to updraft strength
- Related to incipient severity
- Sub-radar volume scan updates

Available Networks

Existing or planned networks

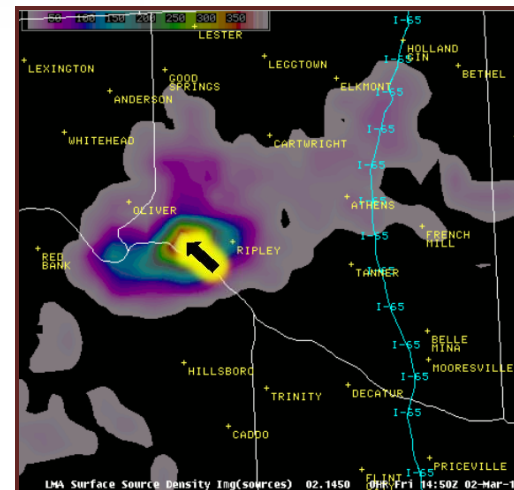
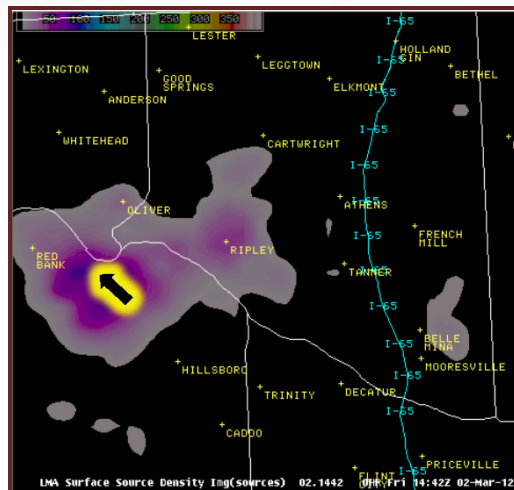
Good observations, but limited range

And soon GLM



Previous use of Total Cloud Lightning in severe weather assessment

- WFO HUN began using Total Lightning in May 2003
- Assessment is subjective due to interrogation of data
- Can be time consuming with many storms



Moving Meteogram Tool History

- Needed tool to assist with assessment
- MDL developed prototype version for AWIPS I
- Tested in AWIPS I at WFO HUN
- AWIPS II deployment began
- SPoRT began development of tracking tool in AWIPS II
- MDL and SPoRT combined the projects
- Tested in Hazardous Weather Testbed (HWT) Spring 2013
- Operations Proving Ground (OPG) 2014
- Project to be base-lined 2014

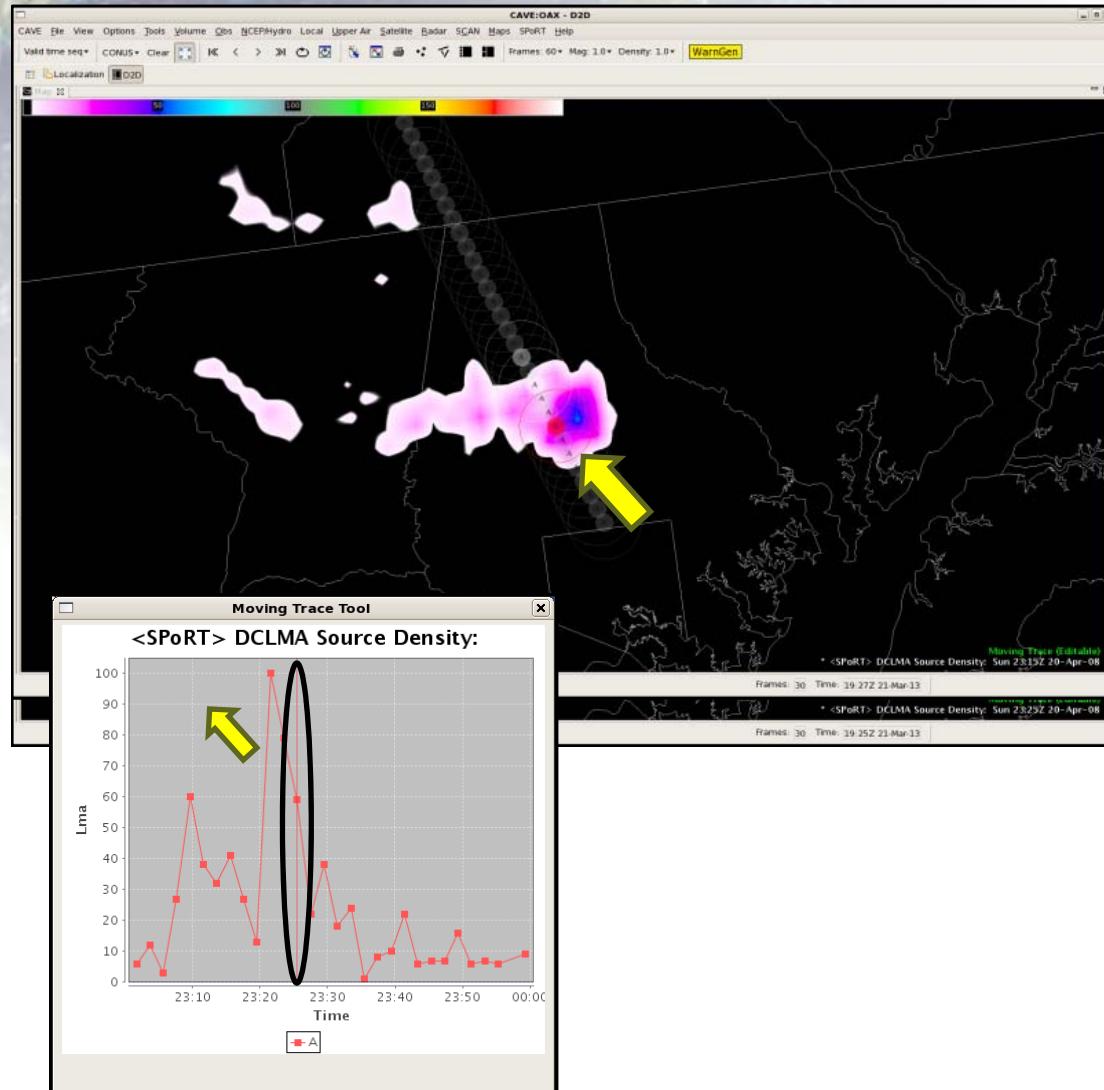


Transitioning unique data and research technologies to operations

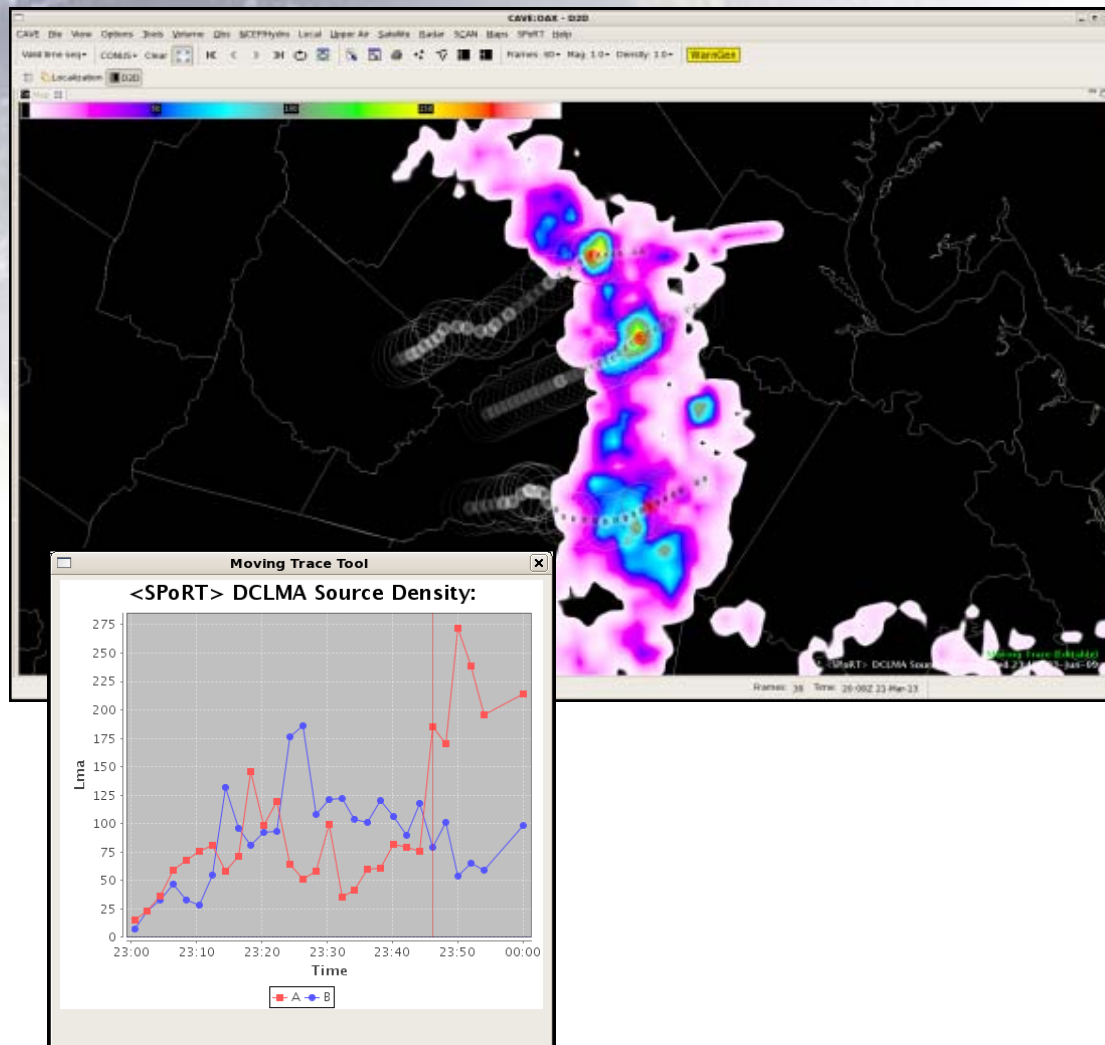


Using the tool

- 1) In “Tools” menu
- 2) Select tracking tool
- 3) Place initial 2 points
- 4) Time location bar
- 5) Adjust radius
- 6) Adjust track at any time



Multiple Feature Tracking



Adding Tracks

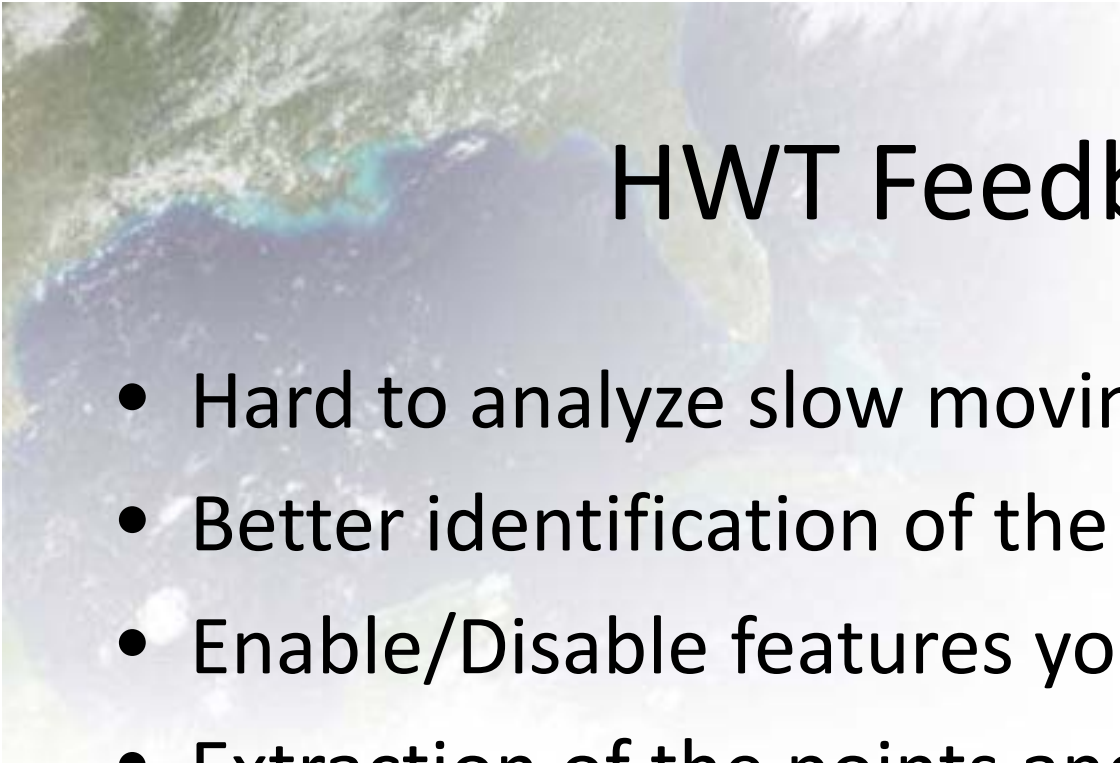
- 1) Right-click in screen
- 2) Select "Add new Trace Line"
- 3) Place tracks as before

Deleting a Track

- 1) Right-click on active point of track to delete
- 2) Select "Delete Line"
- 3) Track is removed

Uses with other data types

- Satellite Data
 - Track cloud top cooling rates
 - Water Vapor
- Model and Analysis Data
 - Minimum Pressure in a Low
 - Variables following a front
- Radar data
 - Reflectivity
 - Velocity



HWT Feedback

- Hard to analyze slow moving storms
- Better identification of the cells
- Enable/Disable features you are tracking
- Extraction of the points and values at a specific time

Operations Proving Ground Test

- Testing in May of 2014
- Test the tool in a quasi-operational environment of the Operations Proving Ground
- Learn impact on operations
- Get feedback for improvements
- Move towards integration in AWIPS II baseline



Transitioning unique data and research technologies to operations



Upcoming Additions

- Suggestion Framework
- Better extensibility for building further tools
- Additional views for the data besides graphs
- Highlighting tracks of interest based on plug-able programs



Questions



Transitioning unique data and research technologies to operations

